Cabrillo College Dental Hygiene
Instructional Planning Report

Spring 2019

Contents

Background, Evaluation and Analysis	2
Department and Program Description	2
Relationships	3
Costs	4
Student Learning Outcomes	7
Student Success	10
Results of Student Surveys	12
Curriculum Review	13
Goals and Recommendations	14
Progress on Previous Goals and Recommendations	14
New Directions	14
Relevance to Other College Plans	15
Summary of Current Goals and Recommendations	15
Recommendations (see Appendix- DH current goals and recommendations 2019)	15
REFERENCES	16
Required Attachments	15
Appendix A Community Relationships	17
Appendix B Business Plan	19
Appendix C Current Goals and Recommendations	21
Appendix D Progress on Previous Goals and Recommendations	24
Appendix E Catalog and Curriculum	26
Appendix F SLO Department Assessment	30
Appendix G National Board Outcomes	41

Dental Hygiene

Instructional Planning Report

SPRING 2019

BACKGROUND, EVALUATION AND ANALYSIS

Department and Program Description

The Dental Hygiene (DH) program is a full time, two-year course of study in dental hygiene leading to an Associate of Science degree in DH. The program features an integrated curriculum, focused on the knowledge, skills, and attitudes expected of a Registered DH (RDH). This prepares students to participate in national, regional and state board exams for licensure as a registered DH (RDH). Program outcomes are achieved using a collaborative approach consisting of a theoretical framework, a carefully planned sequence of theory, clinical practicum, and didactic (theoretical knowledge) courses.

Our focus includes providing a learning base that embraces rapidly changing technology and advancements in dentistry. Incorporating the evolving techniques, and innovations improves our students' technology literacy and their marketability. The role of the RDH is evolving. The program is embracing those changes, including incorporating the multiple venues a hygienist can work in and focusing on full body health. The fourth and final semester prepares our students for the workplace by placing them in rotations at an outside clinic where they see a variety of cultures and perform the tasks they will perform in a typical dental office. This experience has been successful in helping students develop critical thinking skills, communication skills, and increasing their cross-training in front and back office duties. We focus on integrated medicine in all courses working with the Cabrillo College Radiologic Technology Program, Nursing Program, and the Stroke and Disabilities Learning Center. Our students cross-train students in Nursing, Medical Assisting, and the Stroke and Disability Learning Center.

The administration, faculty, and staff of Cabrillo College's Dental Hygiene program continue to be highly respected in the region and the state. The Commission on Dental Accreditation (CODA) is the body that accredits dental hygiene programs. The Cabrillo College Dental Hygiene Program is working on its two-year self-study for accreditation. In October 2019, the site visitors from CODA will be evaluating the program. The Dental Hygiene Board of California (DHBC) is scheduled for a site visit in November, 2019. Additional evidence of the quality of our program and graduates is the 100% pass rate for the class of 2018 (22 students) on national written exam, regional clinical exams, and the state law and ethics exam.

A survey conducted this year of the graduating class of 2016 revealed that 100% of those students were employed. In addition, 94% stated that the additional technology skills that we provide made them more marketable, and 41% are planning on continuing their education and obtaining an advanced degree.

The DH Program's goals and outcomes adhere closely to Cabrillo's mission statement: "Cabrillo College empowers students to be effective communicators, critical thinkers, and responsible world citizens. With a commitment to quality and equity, we connect all learners to pathways that propel

them from where they are to where they aspire to be, including: academic, personal, and career growth" (https://www.cabrillo.edu/home/mission.html).

Because the DH program faces substantial financial challenges, many of our goals address projected cost savings to offset the college base budget expenditures.

The DH program's outcomes are:

1. Apply ethical, professional, and legal concepts to the provision and/or support of oral health care services to all persons following the dental hygiene process of care.
2. Demonstrate competence in educating the public on dental health promotion and disease prevention both at chair side and at the community-level, following the dental hygiene process of care.

The Dental Hygiene Program is comprised of two full time faculty members, one of whom is the Program Director (with a 25% teaching load due to the Dental Hygiene Board of California requirements), one temporary full time faculty member and sixteen adjunct faculty members.

Three support staff are allocated for the DH department. There is one Office Specialist with a reduced contract at 75%. There is a 33% Program Coordinator, shared with the Radiologic Technology and Medical Assisting programs. The third position is a 50% Instructional Assistant (IA). This position for many years was a 100% contract, and 50% of the position was paid from clinic income. The Instructional Assistant position has been an open staff position for two years. We have made offers to six individuals, but due to the low compensation compared to market value, recruitments have been unsuccessful.

Due to the reduction in support staff, some tasks are no longer performed as identified in the Office Specialist and Instructional Assistant job descriptions, i.e. sterilization and front office duties. Consequently, the department has had to utilize student workers to perform these tasks.

Community Relationships: Cabrillo offers the only DH Program in Santa Cruz, Monterey, and San Benito Counties (see appendix: DH relationship attachment). The dental hygiene advisory committee has representatives from the local dental and dental hygiene community, the community at large, as well as Cabrillo College representatives. The committee has had great success meeting semi-annually with dental hygiene faculty and student representatives to share information, challenges, and successes. The recommendations from the board have been beneficial in the development of student outcomes and program marketability. Current board members are actively recruiting to diversify the board. The program director has also reached out to other businesses and organizations in an effort to be more inclusive.

Campus relationships: DH faculty work closely with their counterparts in the Allied Health Department. We have had great success with programs that include dental hygiene students teaching topics such as oral care of cancer patients, use of fluoride varnish, and dry mouth treatments to medical assisting, radiologic technology, and nursing students. The students in DH all rotate through the Cabrillo College Stroke and Disabilities Learning Center doing research and teaching. DH also collaborated with the Nursing Program to complete a research project for the National Institute of Health (NIH). This program allowed the students to see firsthand the inner-workings of NIH and participate in the in the "All of Us" pilot project that will be instituted across the United States. The students recruited participants for a survey that collected data to examine health-related behaviors, and psychosocial well-being.

There have been collaborative efforts in meeting student needs with prerequisite classes including the Biology, English and Math Departments. Sharing the required skills students must have to complete the DH program with these programs has helped with student success.

One focus of the program is computer literacy. Our national board test is administered online. Students reported in the 2015 survey that they had difficulty adjusting to the use of the computer in the national board testing. We have worked on this issue by integrating computer use into our classes and utilizing Canvas as our base for all courses. We have had ongoing training and calibration for faculty during FLEX week and monthly staff meetings. Working with TLC and the HUB we have been able to incorporate the use of computers into all classes.

There are additional resources on campus that the dental hygiene program has embraced. Our students are introduced to resources including financial aid, housing, transportation, tutoring, counseling, and others at the start of each semester and before entering the program. Our program has also been a resource to other departments providing oral education and dental hygiene services to students, part time faculty, and staff.

In collaboration with Accessibility Support Center (ASC), DH faculty provide required accommodations for students needing accommodations. The DH Program works closely with ASC to review procedures and policies on a regular basis and have included this training in our monthly faculty meeting agenda.

The use of library online research is a vital part of the education of all health care providers. We have worked with the HUB Director to develop a peer-tutoring program, this program has moved forward with one of our first year students tutoring peers.

Costs

On July 1st, 2017, the CODA Standard 3-6 concerning to Faculty to Student Ratios changed. At present, the student ratio must be 1:5 in preclinical, clinical, and radiographic clinical and laboratory sessions and the faculty to student ratio is 1:10 in dental materials labs. In planning our budget for the 2017-2018 fiscal year, funding had to be considered for additional faculty members to meet this revised accreditation standard. Between 2012-13 and 2016-17, DH was able to reduce the percentage of college cost by 1.521% (see Table 2). Our continued degree in the percentage of College funding put us in line with other programs.

Comparison Chart of Dental Hygiene Base with College Base Expenditure: Table 2

Dental Hygiene Academic Year	Base program expenditures	College base expenditures	Percentage of College
2016-2017	319,011	26,394,541	1.209%
2015-2016	451,580	26,770,804	1.687%

2014-2015	589,374	26,181,028	2.251%
2013-2014	640,095	25,706,340	2.49%
2012-2013	689,768	25,252,502	2.73%

In 2014, clinic hours were cut in an effort to bring down cost of the DH program. Students started seeing half the patients they cared for in previous years. Income reflected the decrease in the number of patients seen (Table 3). While the dental Hygiene clinic is a viable non-profit business, the management and operation of this business is complex. The students work on patients in this clinic to fulfill the National and State DH licensure requirements. Clinical lab instruction prepares students to be competent and safe in clinical dental hygiene settings. There are expendable products involved in this process. In 2018, the clinic fee increased to cover the average of costs each time a patient sits in the chair which is $14.83. These fees are below the usual and customary fees in the community. The cost of supplies is paid for in full by the funds brought into the clinic by the patients and donations from manufacturers.

Table 3: Income from DH Clinic 2013-2018

Year	Income From Clinic
2013-2014	$65,471.00
2014-2015	$65,471.00
2015-2016	$59,790.00
2016-2017	$57,900.00
2017-2018	$58,491.00

Table 4: DH WSCH/FTES values

	2012-13	2013-14	2014-15	2015-16	2016-17	Trend
WSCH:	1,102	1,068	1,126	1,158	1,122	
FTEF:	6.4	6.3	5.9	5.9	5.8	
Load (WSCH / FTEF):	173	169	192	198	193	
FTES:	77.04	76.52	78.57	81.02	78.25	
College FTES:	10669.59	10426.09	10109.00	9858.96	9631.03	
Percent of College Income (FTES):	0.722%	0.734%	0.777%	0.822%	0.812%	
Program Base Expenditures:	$689,768	$640,095	$589,374	$451,580	$319,011	
College Base Expenditures:	$25,252,502	$25,706,340	$26,181,028	$26,770,804	$26,394,541	
Percent of College Expense:	2.731%	2.490%	2.251%	1.687%	1.209%	
Income/Expense Ratio:	0.26	0.29	0.35	0.49	0.67	

Table 5

Dental Hygiene FTES/WSCH/FTEF/Load

YEAR		DH FTES			DH WSCH			DH FTEF		DH WSCH / FTEF = LOAD		
	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring
2012 - 2013	5.70	36.60	34.79	175.94	1130.28	1074.29	1.02	11.66	6.15	172.83	96.94	174.68
2013 - 2014	7.37	36.36	32.79	227.65	1122.95	1012.55	1.13	6.62	6.15	200.63	169.63	164.64
2014 - 2015	5.62	36.27	36.68	173.59	1120.01	1132.69	1.13	6.09	5.62	152.99	184.01	201.43
2015 - 2016	6.00	37.50	37.52	185.29	1158.09	1158.72	0.96	6.19	5.52	193.42	186.99	210.04
2016 - 2017	5.79	37.55	35.38	178.76	1159.55	1092.66	1.02	6.15	5.45	175.60	188.44	200.49
2017-2018	6.66	39.22	38.77	205.76	1211.12	1197.29	1.13	6.39	5.29	181.88	189.63	226.30

Cost data compared to FTES confirm that dental hygiene is an expensive college program. Costs averaged 2.0% of the overall cost of the college while FTES generated by the program averaged 1.0% of the college over the last five years (Table 5). However, the department pays all operating expenses with income from the dental clinic. The college only pays for personnel cost for faculty and classified support.

In 2014, due to budget considerations,100 teaching units were cut from the program. Cabrillo subsidizes one cohort per year. Because this limits the number of yearly dental hygiene graduates to a cohort every other year, the DH program raises $140,000 a year in order to accept a new incoming cohort each year, resulting in a cohort graduating each year.

The program developed a twelve-step business plan during the 2017 academic year (see appendix DH Business Plan 2017-2018). Each of these measures has been accomplished and has contributed to the success of the DH Program. Working hand in hand with the Marketing Department and Extension, the CE courses have been profitable. The Expanded Duties, Remediation and Continuing Education courses grossed $211,000 in 2018. The pathways noncredit course has increased FTE. The increased fees in the clinic started in fall of 2018. We have received over $75,000 in gifts in kind. The rotations at Salud includes Salud paying for our faculty member for one full day each semester. The collaborative with the SCCHD supplied us with toothbrushes, floss and toothpaste for patient care. The Alumni outreach program brought in $14,000 in donation. Each step has brought us closer to sustainability.

Students are required to purchase a dental hygiene kit, which cost approximately $8,000 in 2016. This year we were able to lower the cost by getting bids and going directly to the manufacturer. The cost in 2018 was $5,400. This fee is incorporated into a student fee to allow students to utilize their financial aid to offset cost. This supports the fifth Cabrillo College vision statement: "Equity at Cabrillo College is the commitment to cultivate an inclusive teaching and learning environment by providing equitable support, access, and opportunities for success, emphasizing historically underrepresented and emerging student populations." Cost reduction for the students facilitates access to the DH program for all students. The dental hygiene program has achieved sustainability with this business plan and continues to increase stability.

The Dental Hygiene Program previously accepted twenty-two students per year into the two-year, four-semester program. The Dental Hygiene Board of California (DHBC) and CODA require that the program include 1,600 hours of instruction. In 2019 we plan on increasing the entering students by two to 24.

The Dental Hygiene Program directly aligns with and supports the mission of the college. Our graduates are workforce ready, engaged in the community, and lifelong learners.

Student Learning Outcomes

In addition to our Cabrillo College requirements, the DH department is required by our accrediting bodies to assess SLOs at a minimum of once a year. Data from our assessment mechanisms (rubrics, quizzes, exams, student didactic/clinical grades, student clinical competencies as well graduation rates and success rates on National Board testing, Regional clinical testing) are used to evaluate success (see appendix F: SLO Departmental Assessment Analysis 2012-2017). The department has an annual meeting to go over didactic outcomes and a biannual meeting to go over outcomes from clinical evaluations. As a result of these outcomes, adaptations and changes are proposed and submitted to the curriculum committee.

Another assessment that has been helpful planning is the NBDHE (See appendix G: Tables 6-9). Students take this 350 multiple-choice-question written examination in the last semester of their second year. Scores for this testing are measured in d value. D values represent the standardized difference between the school's average raw score (i.e., average number correct) and the national average for each of the disciplines covered on the examination in standard deviation units. A positive d value of 1.0 indicates that the school's average is one standard deviation above the national average. A d value of -1.0 indicates the school average is one standard deviation below the national average. A d value of 0 would indicate the school's average falls directly on the national average.

Scores are broken into categories including physiology, patient assessment, radiology, community health, case based, anatomic science, physiology, biology, nutrition, microbiology, immunology and pathology.

The d value scores during the past five years reflect some of the challenges and progress the program has made and correspond with our SLO findings.

All of our students historically have passed the national boards. Typically passing has happened with one attempt. In 2017, two students had to take the national board twice to pass. Both the students felt that with English not being their primary language, it was difficult to take the National Board Examination, which added a challenge in understanding some of the concepts. The graphs

from NBDHE 2013-2017 reflect the impact of the retirement of three full time faculty, new part time inexperienced instructors, units cut from key courses, and the loss of 100 teaching units (see 2013-2017 graph). Courses that had units cut were impacted with lower scores than courses that did not have units cut.

An example is Periodontology course. This is a core course. The long-time instructor for periodontology retired (three of our full-time faculty have retired and not been replaced). The course d value went down significantly to -0.46. Periodontology was a course that we were typically above the d value (2013, 0.15). The score then continued to recede to -0.92. In reviewing the data this decrease was associated with multiple factors including retirement of full time faculty, assignments of adjunct faculty to teach core classes and frequent changes of instructors teaching this and other courses.

The 2017 score went up significantly to 0.63. (see Appendix This is due in large part to utilization of our SLO Departmental Analysis. We have been able to evaluate and resolve some the areas that are reflected in the Periodontology course. In 2014 and 2016 this course was recognized in the SLO analysis as a course that students tended to struggle with acquiring the course content. Since the long-time instructor retired it was suggested to have mentors for new instructors. In the classroom it was recommended to increase in class discussion and activities, student collaboration and peer review, state criteria for grading more explicitly, increase interaction with students outside of class. For the faculty it was recommended to offer and or encourage attendance at outside seminars on teaching methodology. Each of these areas were addressed and the outcomes increased positively to above the national d value in 2017 (see appendix).

While we have had a 100% passage rate on the national board, our concern is with the students' critical thinking and application of knowledge as reflected in the declining national board d values in specific core courses. The department has continued to evaluate, plan and implement programs to address these needs. Other factors that play a role in the 2016 score included English as a second language, family and health challenges and transportation.

This year our SLO department assessment analysis has shown strengths within the program and revealed areas we need to work on.

<u>Strengths:</u>

- Overall, all of our students master the SLOs. We have had a 100% passage rate on the national boards. Typically, students have passed on the first attempt. Also, we have always been above the national standard on the overall testing. (see Appendix G: Table 6) this represents the d values standardized difference between the schools average score in all areas of the test the national average score.
- Students excel in use of faculty office hours both in the clinic and didactic tutoring.
- Students excel with a mock WREB-CRDTS exam. We have a highly-calibrated faculty in general and are able to utilize Taleval to evaluate and calibrate staff that is deficient.

Challenges:

- It is clear from our NBDHE results, course outcomes and SLO discussions that in our clinic courses and Radiology, Head and Neck Anatomy, Pharmacology, Periodontology, Oral Pathology courses we are in need of additional tutoring hours from the faculty.
- Faculty need more time to calibrate clinical and didactic course content. Compensation for that needs to be secured. We have incorporated time for calibration into faculty meetings. This has

helped but we have 16 part-time faculty members who come on different days and are not readily available.

  - Based on the d values in table 9, our students need to improve their DH Care. We have review our SLOs and reviewed the NBDHE profile report involved with periodontics and supportive treatment. We had all staff attend teaching methodology courses and developed new teaching methods to meet students' needs. This has greatly improved our d values outcomes.
  - In 2017, the d values indicate that our students perform below the national average on anatomy. Many students take these specific courses at colleges outside of the Cabrillo district.

- The loss of faculty has resulted in decreases in student mastery of SLOs. The graphs from NBDHE 2013-2017 reflect the impact of the retirement of three full time faculty, new part time inexperienced instructors, units cut from key courses, and the loss of 100 teaching units (see 2013-2017 graph). Courses that had units cut were impacted with lower scores than courses that did not have units cut.
  - For example, Periodontology used to be a course that we were typically above the d value (0.15 in 2013). The d value has since gone down significantly to -0.46 and to -0.92. In reviewing the data, this decrease was associated with the retirement of the long-time instructor for this course (three of our full-time faculty have retired and not been replaced), assignments of adjunct faculty to teach this core course, and frequent changes of instructors teaching this and other courses. We have had three different part time faculty teach this course over the past two years. Two of the instructors left because of receiving offers for higher paying positions at other schools. (See Table 9)
  - After the retirement of a long-time instructor, students have struggled with community oral health from 2014 to 2016.
- Some students for whom English is a second language find it difficult to take the National Board Examination. In 2017, two students had to take the national board twice to pass. Both students felt that, since English was not their primary language, this added a challenge in understanding some of the concepts.
- In the 2016 NBDHE scores, family, health, and transportation challenges also negatively affected student performance.
- The Dental Administrative Assistant Certificate has not been assessed because it is new, and the first cohort has not completed the program yet.

The department has continued to evaluate, plan and implement programs to address these needs.

<u>Strategies for improvement:</u>

- We are in need of additional peer tutors and tutoring hours from the faculty for our clinic courses and Radiology, Head and Neck Anatomy, Pharmacology, Periodontology, Oral Pathology courses.
- We have been able to evaluate and resolve some the challenges in the Periodontology course. In 2014 and 2016, the course was recognized in the SLO analysis as a course that students tended to struggle with acquiring the course content. Since the full-time instructor's retirement, it was suggested to have mentors for new instructors and to offer and/or encourage attendance at outside seminars on teaching methodology. In the classroom, it was

recommended to increase class discussion and activities, student collaboration and peer review, state criteria for grading more explicitly, and increase interaction with students outside of class. After these strategies were implemented, the 2017 d value went up significantly to 0.63.

- There is a need to evaluate the use of HESI assessments in the future. Historically the program has had a 100% passage rate on first try of National Board Dental Hygiene Examination (NBDHE). Rarely is there a failure on the exam. Since the cut of faculty hours our rates and percentages on the National Board exam has gone down. HESI and structured tutoring specific to deficiencies can help to direct limited hours we have available. HESI data can also help faculty work on areas that are lacking in the classroom. This system has proven to be beneficial in evaluation of course content and success. In particular, we plan to add HESI evaluation and programing to strengthen students understanding of anatomy.
- Faculty need more time to calibrate clinical and didactic course content. Compensation for that needs to be secured. We have incorporated time for calibration into faculty meetings. This has helped but we have 16 part-time faculty members who come on different days and are not readily available.
- Obtaining full time faculty paid at the same rate as surrounding DH schools is a goal for the department.
    - The scores in Community Oral Health have been solid since we have a new, experienced teacher teaching that course. In 2017, students performed above the national average on community health questions on the national boards. (See Table 7)

Student Success

DH learner outcomes are closely aligned with the skills and competencies required to practice competently as a RDH (see Appendix G National Board Outcomes, tables 6-9). Theoretical content, didactic content, laboratory skills, and critical thinking approaches to problem solving are taught, all of which support clinical performance. Ultimately, the measure of success is that Cabrillo graduates find and maintain employment in dental hygiene. The student survey shows consistently 100% employment of our graduates upon completion of their Boards.

Student success measures include retention and completion of required courses and passing the Dental Hygiene National Boards and the California State Board examinations. Table 6 reflects Dental Hygiene National Board Outcome Measure from 2012-2017 (see appendix G). One hundred percent of the students from 2012 to 2018 have passed their practical board. The practical board involves students taking using live patients to perform local anesthesia and performing quadrant scaling and root planing.

Students also take law and ethics examination for the State of California. We have had a 100% passage rate for this examination.

Dental hygiene is fortunate to attract highly motivated students. Although, for the students unable to complete any given semester, there is relatively equal attrition due to failure and personal reasons. A student who fails a semester may repeat once during the four semesters.

The goal of the DH department is to see each student with the capacity to succeed complete the program. In general, student retention is better in the second year. Attrition is attributed mainly to the decision that Dental Hygiene is not the career for the student and academic failure because of family or work responsibilities. As we increase the diverse base of students in the dental hygiene program, new challenges in student support will need to be addressed by faculty, which may require continuing education as well as campus collaboration.

Table 10: DH Student Values from Pro office

Value	*2012-13*	*2013-14*	*2014-15*	*2015-16*	*2016-17*	*trend*
Major Count	*131*	*107*	*123*	*150*	*168*	
Percentage URM	*59.5%*	*61.7%*	*61.8%*	*61.3%*	*66.7%*	
Percentage Female Majors	*87%*	*90.7%*	*84.6%*	*85.3%*	*83.3%*	
AS Degrees Awarded and Headcount	*18*	*17*	*19*	*20*	*19*	
AS Time to complete	*2.17*	*2.09*	*2.14*	*2.10*	*1.98*	

We are working hard to make student success and increase student marketability. Our students have also had the opportunity to complete certification in Immediate Temporary Restorations (ITRS) and Laser Therapy. All of the class of 2018 completed these additional certifications.

One of the unique strengths of this program in support of students is the College Student Inventory (CSI) assessment, which is a component of the Ruffalo/Levitz Retention Management System (RMS) and is a great resource for faculty in supporting students' individual needs. These results give the DH program an early alert system to identify at-risk students and focus on using CSI results to identify specific needs to different student groups. We have had a large percentage of first generation college students in our group. As an early intervention for student support and success,

our program director has "walked" students to the various resources on campus that they were not aware of at the beginning of the term. A full tour of resources and the campus is done at our open house, orientation and during the first summer course the students take. Using the CSI results, the director and clinic coordinators meet with students individually to help direct them to specific needs such as financial aid, student health services, counseling, academic counseling and other resources.

The dental hygiene labor market is impacted by an aging population, the increasing technological complexity of healthcare, and anticipated retirements of an aging workforce. This has led to a continued demand for DHs. There is a need for health care workers, from entry-level positions to advanced-practice professionals. Cabrillo dental hygiene graduates are well prepared to enter this job market.

DHs primarily work in clinical dental office settings and are employed by dentists. The salary of a DH depends primarily upon the responsibilities associated with the specific position, the geographic location of employment and the type of practice or other setting in which the hygienist works. Hygienists earn salaries equal to other health care personnel with similar educational backgrounds and experience. The median wage in 2012 for DHs in California is $96,317 annually, or $46.31 hourly median. Annual incomes 2018 range from $88,183 to $116,444 or, $48.44 hourly median. (see Table Source: EDD/LMID Occupational Employment Statistics Survey, 2012 Wages do not reflect self-employment).

According to the Federal Bureau of Labor and Statistics the profession of dental hygiene is expected to grow by 20 percent, with 40,900 jobs between 2016 and 2026, and faster than other ALH careers. The nationwide median pay in 2017 for associate degree DHs was $74,070 per year and $35.61 per hour (http://www.bls.gov/ooh/healthcare/dental-hygienists.htm).

Table 1: Dental Hygiene Wage in California	
Median Pay	$116,444
On-the-job Training	None

Source: EDD/LMID Occupational Employment Statistics Survey, 2012

Results of Student Surveys

For the graduating class of 2018 to 2019 DH student are predominantly female, comprising 92.5% of the class. Labor board statistic show for 2018 show 97.10% of DH as female (https://www.dol.gov/wb/stats/nontra_traditional_occupations.htm). Our statistics reflect the on-going recruitment of male candidates. The age range of dental hygiene students' peaks with 72.2% being between 24-29 years old, 6.6% below age 23 and 16.6% of the class being 30-34, 5.5% being 35-39 years old. Underrepresented ethnicities comprise 72.5% of the class. Ethnicity includes: 55% Hispanic, 2.5% American Indian, Asian, 15% two or more races, 28.5% white. These facts have implications for meeting state dental hygiene needs in gender and ethnicity diversity and productive workforce years. It suggests that the dental hygiene program has supported midlife career changes for our community members. In addition, it underlines the need for recruitment of future DHs through outreach programs and publicity efforts. Students attending the Cabrillo dental hygiene program reported they attended Cabrillo College DH to prepare for a new career (84%) the second

reason was the department's reputation (64%). 71% want to gain as associated degree and 17% plan on transferring to a 4-year university after graduation.

The dental hygiene faculty assessed the information and developed changes as a result of reading the survey. One of the major concerns in dental hygiene nationwide is that DHs are over-educated for the majority of the skills that they perform. Most DH faculty were evaluated by students as being: "wonderful, helpful, encouraging, and knowledgeable." There were multiple comments about being well prepared to take the national, state and regional board examinations. Several students noted positive experiences in the program and state of the art equipment, Allied Health Foundation week, cutting-edge information, support from faculty and an overall positive experience. Challenges they shared included financial challenges, need for department tutors, excessive workload for students, need for calibration of faculty in clinical courses teaching methods and grading, increasing methods of instruction in didactic courses for long-term instructors. These comments were well-received by the faculty and have been considered as we evaluate the need for change.

Curriculum Review

In 2014 proposed legislation requiring Dental hygiene students to finish specific courses before entering the dental hygiene program was put into California state regulations. In 2016 those regulations went into effect. Our faculty has been working hard to meet this requirement.

In addition to these requirements two other topics have been added to required curriculum over the past five years. The number and types of injections have increased in the pain management courses, the number and length of time required for nitrous oxide analgesia has also increased. We are now required to teach Interim Therapeutic Restorations (ITRs), and the student must have 10 placements of ITRs. With decreased clinic time due to economic issues we had to condense these courses. Our curriculum meets the requirements of 1,600 hours and the specific prerequisites. It is necessary to keep the clinic hours as they currently are because we are at the minimum hours required with no room for errors or time off for students.

We have reviewed curriculum for the Dental Hygiene Board of California Self Study that was due in 2016 and the CODA study that we are currently preparing for. We have incorporated continual review and calibration of course into our faculty meetings and Flex week training.

Goals and Recommendations

Progress on Previous Goals and Recommendations

The previous goals and recommendations have been quite successful (see progress on previous goals and recommendations attachment). We were able to host the Western Regional Board examination and added the Central Regional Board examination. This brought in funding for the program as well as allowed students to take the examination in a clinic where they are familiar. We were successful in hosting a hands-on extension course for anesthesia. This course sold out three weeks after the first advertisement. The post attendance survey revealed that the registered DHs

who attended found the course valuable and wanted more courses like this. We attained our goal of giving more continuing education courses and brought sustainable income into the program.

Current Goals and Recommendations

Our current goals and recommendations have been formulated by using our SLO, boards, survey, faculty input outcomes. For example, goals, 4, 6, 9 and 11 were formulated from SLO findings (see Appendix f). Our SLO input was vital in identifying the need for increased professional development for staff, full time faculty, HESI and tutoring for students.

Using student surveys, we identified a need to promote strategies that foster success with an increasingly diverse student body. The Dental Hygiene Program needs to remain sensitive to changes in the age, gender, and cultural/ethnicity of the student population. Our current goals and recommendations include outreach to promote the program in all areas of our community to meet the needs of both students and patients. The program has taken an equity approach to our staff development, spending a portion of our faculty meeting and flex week training to look at and acknowledge the different needs of students from different backgrounds.

Goal 1: Purchase Automatic Colony Counter to Test Water in the Dental Clinic

It is required by law that we test the water in the dental hygiene clinic for coliform bacteria levels (CFU) in order know that the water is safe to use the water for dental procedures. We have had a gift in kind for this procedure that will end soon. This is a very expensive process and requires us to test our 19 chairs. An automatic colony counter with imaging station would eliminate the need for outside testing and give the students an additional skill making them more marketable. This would also be used in the Infection Control Coordinator non-credit course and the Community Health and research course. $6,800. Long term this would be cost saving to the school by removing the need to contract out this work.

Goal 2: Replace Pediatric DXTTR Dental X-ray Manikin

Students need more experience taking dental radiographs on a pediatric DXTTR manikin. Currently, they are using a very old skull that is broken and not working properly. Our SLO for Radiology showed that students struggling with taking radiographs for pediatric patients and need extra practice with a pediatric manikin. Not having a working pediatric manakin makes this difficulty. It is better to make a mistake on a manikin than a human. $8,500

Goal 3: Develop Stroke and Disabilities Learning Center Clinical Rotation

Currently the students do a Community Oral Health research project at the Stroke and Disabilities Center. One of the things that was discovered in our research was the complex issue with transportation and access to care for the

students that attend the Stroke and Disabilities learning center. We would like to increase DH exposure to serving this population by adding a clinical rotation at the Stroke and Disabilities Center. Utilizing portable equipment students would learn to serve those dealing with strokes and learning disabilities. This program would increase the student's ability to work in a variety of settings, understand other cultures and increase their marketability. We have obtained over $25,000 of the portable equipment that we need for the project. We would need an $50,000 to implement the project.

Goal 4: Increase Professional Development Program for Faculty

Recommendation Provide more professional development for both faculty and staff. Professional development courses focus on cultural sensitivity, program effectiveness, teaching methodology, student assessment and staff development. Regularly schedule training is essential in improving student learning outcomes through faculty calibration. As our faculty continues to retire (3 this calendar year) we are in need of training for our new faculty. $20,000.00

Goal 5: Provide necessary equipment for the DH7 Head and Neck Anatomy Course

The biology department has graciously loaned the Dental Hygiene Department the skulls and disarticulated skulls for head and neck anatomy. They are no longer able to do this because the bones need to return to their inventory. Working with the biology department and the course instructor we need to obtain the necessary bones for the lab portion of this course. $19,000.00

Goal 6: 2 Additional Tenure Track Full Time Faculty

Recommendation In fall 2018, apply for two Tenure Track Full-time (FT) Faculty Position in the Faculty Prioritization process. Due to recent retirements the DH program has gone from four (4) FT faculty members to one and a director. In order to be compliant Dr. Adina Pineschi-Petty, Educational Specialist at the Dental Hygiene Board of California (DHBC) recommends four (4) FT faculty members according to the state regulations 11.05.1.e, 11.05.2.i and 11.05.2k. Dr. Petty stated that the DH Department could be cited for noncompliance. To meet the Commission on Dental Accreditation DH Standard 3-7 three FT faculty members would satisfy the Faculty ratio Standard. We were granted one full time temporary faculty member in 2017 for 2018. We were told if we could become financially sustainable, we would be granted our request. This year we have raised well over the $140,000, increased income in the clinic and brought down the overhead of the clinic. The incoming class will consist of 24 students and we will need additional faculty to meet those needs. Obtaining full time faculty paid at the same rate as surrounding DH schools is a goal for the department.

$132,000.00

Goal 7:	Reinstatement of 25 Teaching Units
Recommendation	Due to the College's budget cuts 100 teaching units were removed from the DH yearly allocation. This means that the program must fund raise $140,000 a year to be able to take an incoming cohort. The fundraising has been successful and created a sustainable program. The TU's that were removed make it very difficult to meet the student's needs and the continually growing list of courses that are required by the state. $43,550.
Goal 8:	Increase the 50% DH Instructional Assistant to 100%
Recommendation	Due to the number of lab and clinic hours each semester (41 hours in fall and 33 hours in spring), there is a need for a full time IA. State and federal laws require an infection control coordinator on sight at all dental facilities. The instructional assistant is only on site 20 hours a week. Currently we have a temporary part time person working 10 hours a week. We have tried to hire for this position for 2 years without success. Without a full time IA, FT and adjunct faculty are working out of class, performing tasks that are in the job description of SEIU members, in addition to their performing tasks per their certificated teaching contract. Summer -5 hr. of lab per week, fall- 41 hr. of lab or clinic per week, spring-33 hr. lab/clinic/week, total of 79 lab hours for an academic year is $25,000
Goal 9	Assign a new full time faculty member to institute HESI
Recommendation	The HESI program prepares the students for the National boards. These pre-built exams are designed to assess student knowledge and concepts learned and begin to prepare them for standardized testing with NBDHE examination style questions. It also helps the faculty to know the areas of weakness. There has been a challenge in instituting the HESI program. We have limited full time faculty to oversee the program. 2 TU: $4,156
Goal 10	Host a regional meeting for CDHA Student Meeting 2019 and CDHEA meeting in 2021
Recommendation	We have been asked to host the state student meeting for the California DHs Association in 2019 and the California DH Educators Association in 2021. This will give us the opportunity include all of our students in leadership roles and help them to embrace their professional association. We can also recruit at the educator meeting the faculty we are in need of. No cost

Goal 11:	Develop a tutoring program
Recommendation	There are students with limited resources that need tutoring in courses specific to Dental Hygiene. Developing a tutoring program would increase student success and outcomes. We have been pursuing Strong Workforce funding and collaborating with HUB.

Goal 12	Promote strategies that foster success with an increasingly diverse student body, remaining responsive to changes in the demographics of the student population. Our current goals and recommendations include outreach to promote the program in all areas of our community to meet both students' and patients' needs. The program has committed to ongoing training to appreciate the different needs of students from different backgrounds.
Recommendation	

Goal 13	Replace peeling formica that is broken down and peeling in clinic. The counter tops in the clinic and cupboards were not installed medical grade. Over the eight years of use they have broken down, the poor quality press board is expanding and falling apart in areas. One of the sinks has de-laminated and is leaning over. $25,000 to replace sinks with medical grade materials.
Recommendation	

New Directions

The Cabrillo College dental hygiene program is in an era of change in the profession of dental hygiene. The expanding profession of dental hygiene is moving forward. Education must match these changes. The role of the DH, scope of practice and venue that hygienists can practice in is evolving. The state of California signed into legislation the first dental hygiene self-regulating board in the nation.

Cabrillo DH has been involved in this process by giving testimony to the board, working committees and our program director who is serving as the immediate past president of the DHBC. Our lead supervising dentist is a member of the task force for calibration of anesthesia requirements. Our faculty and staff have given input to the new board.

We are expanding our program to meet the new complex roles that the DH will be filling. Early childhood caries is the most prevalent unmet health care need for children nationwide (Benjamin, 2010). The quality of life from infant to geriatric has been directly correlated to oral health (Locker,

1997). The increase of venues and duties the DH can perform is increasing to meet these findings (Central Coast Needs Assessment, 2017).

The DH students are now doing new rotations in the Community Health and Research course. We are no longer focused solely on visiting grammar schools. The rotations include, seniors, special needs, adolescents, physically challenged, stroke and disability, those dealing with addiction and mental health issues. We have expanded our courses to match the state requirements now including a course and certification of Interim Therapeutic Restorations. We also offered certification in laser therapy.

We are working to expand the size of the program to meet the community needs. It is estimated that the demand for DHs in our region (Santa Cruz, Monterey, San Benito, Santa Clara Counties) will be 13,499 by 2020. Currently the average degrees for this field in our area is 3,321 (https://www.onetonline.org). The dental hygiene field is considered grossly undersupplied in our area and the state. In order to increase the size of the program we need an additional full time faculty member. This additional full time faculty member would allow us to admit eight more students.

One issue that has arisen from the financial challenges in 2014-2016 is that many in the community do not think that we are financially solvent and have the impression that we may be closing soon. We are working with marketing to change that perception. Our students, faculty and director are going into the community to share the message that we are reaching our 50th anniversary milestone and will be here for fifty more years.

Because of the success of the Cabrillo College Dental Hygiene program received the Gold Start ranking by the California Community College Chancellor's office. This highest available achievement reflects our students showing significant gains in factors important in building a skilled workforce and for advancing personal social mobility: a substantial increase in earnings, attainment of a living wage and placement in a job closely matched with the field of study.

Relevance to Other College Plans

The CC Strategic Plan 2014-2019 goals include in section two (2) sustainable programs and services. This plan has given us a map to follow. Following section 2.1-2 we have identified and prepared for anticipated growth areas and addressed student needs. We have ensured the program is up to date, responsive to student learning needs and changes in the job market. This has required us to be flexible and develop additional courses such as Laser Technology and Interim Therapeutic Restorations.

We have reached out to the community using goal four (4) of the strategic plan for resources for donations of equipment and input from industry experts (section 4.3).

We have improved orientation and education planning (section 2.5.2). We surveyed past students on their orientation experience and reformatted our orientation. As students are oriented to DH, they are taken across campus to see in-person all the available resources to support their success. We have met with counseling, auditors and evaluators to incorporate the state mandated prerequisites and calibrate information provided to students and the community.

As students are experiencing challenges academically and personal, we have been able to help them recognize the available resources on campus. From tutoring to mental health these programs and plans have increase student success rates.

Summary of Current Goals and Recommendations

Recommendations (see Appendix- DH current goals and recommendations 2019)

The goals for the next instructional planning cycle are the following: Obtain the necessary equipment to do required water testing in the clinic, to repair the formic in the clinic that is delaminating, increase professional development program, develop Stroke and Disabilities Learning Center clinical rotations, provide necessary equipment for the DH7 Head and Neck Anatomy Course, hire 2 Additional Tenure Track Full Time Faculty, reinstatement of 25 Teaching Units, increase the 50% DH Instructional Assistant to 100%, replace pediatric DXTTR Dental X-ray Manikin, increase student access to faculty tutoring, host a regional meeting for CDHA Student Meeting 2019 and CDHEA meeting in 2021, and assign a faculty member to institute HESI.

REFERENCES

Benjamin R.M. (2010, March-April). Oral health: The silent epidemic. *Public Health Report*. *125*(2), 158–159.

Locker D. (1997). Concepts of oral health, disease and the quality of life. In: Slade GD, ed. *Measuring oral health and quality of life: Dental Ecology* (pp. 11-23). Chapel Hill: University of North Carolina.

United States Department of Labor, Employment and Training. (2017). *O*NET surveys.* Retrieved from https://www.onetonline.org

United States Department of Labor, Traditional Occupations, Annual Averages (2014). Retrieved from https://www.dol.gov/wb/stats/TraditionalOccupations.pdf

United States Department of Labor. (2017). *Occupational outlook handbook*. Retrieved from http://www.bls.gov/ooh/healthcare/dental-hygienists.htm

Required Attachments

Appendix A Community Relationships

Community Relationships:

a. Foothill College: The DH program is working collaboratively with Foothill College, which has a pilot state-approved bachelors' program at a community college. To date eight of our students have pursued an advanced degree in the degree completion program from Foothill after graduation from Cabrillo. While this is a great opportunity, it also impacted the number of new applicants we have gotten. Many in the area are reporting that they are applying to Foothill because they can get a BS at community college in the same amount of time and cost.

b. CTEP: Cabrillo College and the Cabrillo Dental Hygiene Program are active participants with the Career Technology Education Program (CTEP), formerly known as ROP for Dental Assistants and Registered Dental Assistants. CTEP provides courses in radiology for the local dental community using the Cabrillo Dental Hygiene Radiology Clinic. CTEP students rotate through the Cabrillo DH Clinic to gain experience in dentistry and, specifically, dental hygiene. This serves as a career ladder opportunity for the CTEP students to enter the DH program.

c. Salud Para La Gente: Community partnerships and outreach efforts have become core elements of our program. Student surveys in 2018 showed this was the most beneficial part of the program. We gained approval from both CODA and DHBC to have our students rotate through Salud Para La Gente for credit toward their requirements. This program has been successful in meeting the need for culturally diverse interactions, patient load, simulated office experience, and it has helped the DH program financially. Salud Para La Gente funds the salary of our supervising hygienist faculty member and dentist during the rotations. We are working with Dientes Community Dental to have our Pathways Front Office Specialist students rotate through their programs. This helps the students prepare for the workplace.

d. SCCHD: Community relationships have been expanded by the chair of the program. In 2017 she developed a close working relationship with Santa Cruz County Health Department (SCCHD) and Santa Cruz County Oral Health Task force. This has been a great partnership. Our students in their Community Health and Research Course helped accomplish the goals of SCCHD by supplying an educational program for grammar school children. This partnership provided needed dental supplies to distribute in the clinic amounting to over $8,500 in expendable supplies.

e. MDBS: Our ongoing working relationship with Monterey Bay Dental Society (MBDS) not only helps the students obtain jobs after graduation but has been financially helpful to the DH program. We partnered with them on: Big Sur Marathon- This event earned $2,200 for 2018 by staffing a water station with the Monterey Bay dentist at the marathon. This funding is used for the program and provides networking for the dental hygiene program to the community and to the dental community. Monterey Veterans Stand Down- This event earned $2,000 for 2018. This funding is used for the program and provides students with an opportunity to serve homeless veterans in the community and to have clinical experience in a portable setting. In November of 2018 MBDS awarded our director with the Community Service award for her hours of dedication and service at the Monterey Veterans Stand Down event.

f. Vendors: We work with multiple vendors to help us reach financial stability. Students and faculty team up to do research projects for Sunstar Americas and ProEdge Dental. We received gift-in-kind grants from Kerr Total Care, Sunstar Americas, Philips Sonicare, GC, America, Spry, Henry Schein, Oral Health America, and many more. Kerr Total Care supplied us with the necessary radiology equipment to keep up to date with new technology.

g. Oral Health America: In Community Oral Health and Research class our 2nd year students wrote an Oral Health America Grant that they received. This supplied the clinic with all the necessary fluoride varnish and sealant material they need to provide services to patients in the clinical and community setting. This consisted of $12,000 in materials the clinic will not need to purchase. The experience of writing a grant is giving the students another skill, which makes them more marketable in the dental community.

h. Pacific Dental: Having these relationships in the field and community has positive impact on the program. For example, our growing relationship in the industry with Pacific Dental provided us with a speaker and equipment for Laser Certification. These Continuing Education programs are available also to the RDHs in the public sector and promote lifelong learning.

i. Crocker Foundations: In 2014, the College was faced with challenging financial concerns. The Dental Hygiene Program was asked to raise $140,000 to accept the next incoming class. The program worked hard to gain financial stability. A generous donation from the Crocker Foundation and fund-raising efforts by students, faculty and staff allowed the program to accept the next incoming class. In 2017 a business plan (see attached appendix-DH Business Plan 2017-18) was developed in the Dental Hygiene Department. This plan included seeking funding for programs from outside companies. These relationships allowed us to introduce other venues for DH students to work in and alleviated much of the financial burden.

j. California Dental Hygiene Educators' Association: Regular contact occurs among all Dental Hygiene Program chairs through email and the annual session. The director of the program participates in a support group for Dental Directors across the United States. We are involved with the American Dental Hygiene Educators Association, and our director has been asked to speak at the 2019 national meeting in June 2019.

k. The California DHs Association has asked to host their Northern California Student Regional meeting on our campus on February 23rd, 2019. We were asked to host because of our involvement and support of the association.

l. Community members: The Dental Hygiene Program makes a significant and substantial contribution to the benefit to the health and wellbeing of the local community as evidenced by an average of 6,000 patient visits a year. The program brought in $58,491.00 from the services rendered to patients. Income from the clinic goes directly to the purchase of expendable supplies. These services are low cost to the community members in need of dental hygiene care and provides a venue for good public relations with the community for Cabrillo College. These patients see the face of Cabrillo College in the Dental Hygiene Clinic. Our survey of 324 patients in the clinic from spring 2016-fall 2018 showed that 100% were pleased with the care provided by my student hygienist, dental hygiene instructor and supervising dentist, costs were reasonable, wait times acceptable, facility clean and they would recommend the services to others in the community. Quotes included: "fantastic experience all the way around," "valuable resource to the community," "exchange has been pleasant every time I am here". The challenges that patients faced included parking, distance of the clinic from their home, completing needed dental treatment that is outside of the hygienist's scope of practice, getting an exam at a dental office and the amount of time required to complete treatment in the school setting. Cabrillo College Dental Hygiene program is an asset to the community.

Appendix B Business Plan

2017 DH Business Plan	Status	Plans for 2018-2023
Development and implementation of Extension Continuing Education (CE) courses. These courses are approved by the DHBC. These courses have the potential of bringing in significant income.	Development of first phase completed Ongoing	Continue Increase marketing and attendance Develop comprehensive courses for all field of medicine
Development and implementation of Expanded Duty Courses required for hygienists moving into the state of California. This is DHBC approved program. These courses have the potential of bringing in significant income.	Approved and completed On going	Continue Increase marketing and attendance Do feasibility study of need for hygienists in state for refresher course
Development and implementation of Non Credit Pathways courses to increase FTE, develop careers for students and increase FTE.	Completed 6 courses for 2 certification programs 28 finished courses Petitioned to removed law and ethics course because given at ROP Developing Infection Control Coordinator Course	Continue courses Market to ROP and community Add Infection Control Coordinator course certification
Development and implementation of Remediation for students that fail their boards more than 3 times. This is a DHBC program. These courses have the potential of bringing in significant income.	Developed and approved by DHBC	Market to schools and students
Increase of fees for the clinic to the community to defray	Completed	Well accepted by the public in general

the consumable costs and support the program.		
Grant writing for needed supplies and capital expenses that increase the costs of the clinic.	On going Very successful bringing in over $75,000 of supplies and needed equipment	Continue to write and work with the foundation
Collaborative student rotations with area clinics that pay for salaries of faculty member to oversee students.	Successful with Salud Plans for other locations	Continue to foster more collaborations
Market school facilities rental from the Horticulture building to Dental Hygiene	On going 3 current projects	Continue
Collaborative with the Santa Cruz County Health Department for student experience and financial support of the clinic including gifts in kind. Outreach to alumni to help fund the program.	On going Successful	Continue
Increase student enrollment to increase FTE.	Increased Non-credit courses Increased Dental hygiene enrollment to 24 for 2019	Continue to evaluate need to increase class sizes and stay compliant with laws
Decrease cost of student kit and build it into student fees.	Decreased cost in 2018 from $8,000 to $5,000	Continue to be conservative on student kits
Solicit donations from Alumni	Achieved $14,000 in donations	Continue program

Appendix D Progress on Previous Goals and Recommendations

	Goal or Recommendation	Progress	Evidence of need (SLO Assessment, etc.)
1.	Host Western Regional Examination Board (WREB) DH practical exam at Cabrillo starting in June 2013	$10,800 Cost analysis TBD *Cost of staff & potential fee increase not included (Source: TA) We supply both the WREB and CRDTS exam on campus. An increase in income yearly $6,700	Supports DH cost savings Supports student success on licensing exam so students can take their clinical exam here at Cabrillo College
2.	Host Local Anesthesia/STC/Nitrous Oxide post-graduate course for RDH's	Approx. fee: $440 ea. 10 students = $4,400; Cost analysis TBD Have hosted both Expanded duty course and Update course. Netted $1,600 on updated course and our Expanded Duty course averages $31,540 net. We offer this course 4 times a year	Supports DH cost savings by offering a fee-based course
3.	Host Continuing Education Courses	Approx. $4,000 Cost analysis TBD We are averaging $6,334 a course and have offered 4 courses a year	Supports DH cost savings by offering a fee-based course
4.	Work with ROP to Host Registered Dental Assistant Written Review Course	Approx. fee: $300 ea. 20 students = $6,000 Cost analysis TBD Have not completed.	Potential ladder of applicants into DH program Supports DH cost savings by offering a fee-based course Supports local RDH employers via ROP

5.	FT faculty transfer to another program in Fall 13	Approx. $39,062 Completed	Supports DH cost savings Reducing DH budget to the College.
Rank	Goal or Recommendation	*Projected Cost*	Evidence of need
6.	Investigate reorganizing the DH staff to help with efficiency, to comply with CODA requirements, and to identify potential cost savings for the college	*Potential cost savings to the district* Working on CODA report currently for the 2019 visit. We have a retired faculty member helping with in the area. We have assigned part time and full time faculty areas to evaluate and implement.	Supports DH cost savings Must comply with CODA Standard 3-12
7.	Investigate and develop a ACE Foundation Course for incoming DH students	Cost: TDB (Major growth); 22 students would generate FTES Course has been very well received and is noted in student survey as an important part of the program	Supports student success and retention Assessment of Program Outcome #1
8.	Develop new dental technology course (digital and panoramic radiology, digital and intra-oral photography, dental office management software) that will be part of the core curriculum and investigate offering it in condensed format or a modular format to the dental community	*Cost: TDB (Major growth); minimum of 22 students with the potential of opening it to the dental community – would generate FTES* This course has been very success with 28 students completing it. It has been challenging to find instructors for the course because of the rate of pay.	udent survey DH Class of 2011, 78% to 89% of the graduates are using electronic record keeping in the office and need this training. upports Cabrillo core value of technology competence in the field ssessment of DH162A & B, DH163B, DH171, DH183,

Appendix E Catalog and Curriculum

DENTAL HYGIENE
Health, Athletics, Wellness, and Kinesiology Division
Cynthia S. T. FitzGerald, PhD
HAWK Division, Associate Dean for Allied Health, SDLC & APE Noel Kelsch, Director, (831) 479-6471
Aptos Counseling: (831) 479-6274 for appointment
Watsonville Counseling: (831) 786-4734
Call (831) 479-6471 for more information http://www.cabrillo.edu/programs
Dental Hygiene A.S. Degree
The Dental Hygiene Program at Cabrillo College, is affiliated with the University of the Pacific, Arthur A. Dugoni School of Dentistry, San Francisco. Upon completion of the 2-year program, students are eligible to take the state and national licensing examinations. Program retention is based on a minimum grade of "C" in all courses in the published dental hygiene curriculum. Courses must be taken sequentially.

A DH is a person who is trained and licensed to provide dental hygiene therapy, expose dental x-rays, and provide preventative services, usually under the supervision of a dentist. The dental hygiene profession demands a high level of ethics, professionalism, critical thinking, and manual dexterity. It is strongly suggested that students meet with an academic counselor to review coursework before applying to the Dental Hygiene Program.

Learning Outcomes:

1. Promote dental health and disease prevention both at chairside and at the community level.

2. Apply ethical, professional, and legal concepts to the provision and/or the support of oral health care services to all persons.

How to Apply

Admission to the Dental Hygiene Program requires a separate and additional process to general college admission. The dental hygiene information and application forms are available online at

http://www.cabrillo.edu/academics/dentalhygiene/. General college admission information is available on the Admissions & Records web site at http://cabrillo.edu/services/ar/.

Read all material in the application packet and the appropriate sections of the Cabrillo College Catalog about the Associate degree in Dental Hygiene, academic regulations, attendance and graduation requirements. Return the completed dental hygiene application forms by U. S. Postal Service Certified Mail and Return Receipt to the Dental Hygiene Program. See the Dental Hygiene How to Apply web page at

http://www.cabrillo.edu/academics/dentalhygiene/.

Applications will be considered if all prerequisites are completed and the student's files are complete. Students are responsible for submitting a complete application to the Dental Hygiene

Program, which must be sent by U.S. Postal Service Certified Mail. It is the responsibility of the applicant to inform the Dental Hygiene Department of any change in contact information including email address, physical address, and telephone number. Applications are accepted throughout the year. There is no application deadline date.

A completed application includes:

1. Dental Hygiene application form,

2. Minimum Physical and Non Physical Standards form,

3. Transcripts documenting ALL completed college coursework

- Cabrillo College courses only: Print one (1) WebAdvisor unofficial transcript.
- ALL other colleges/universities attended: One (1) sealed official transcript.

Acceptance to the waiting list is based on:

1. Completed application as outlined above,

2. Receipt of complete application U. S. Postal Service Certified Mail and Return Receipt requested,

3. Completion of all science prerequisites with a GPA of 2.7 or better,

4. Completion of English prerequisite with a grade of C or better.

Acceptance to begin DH program courses is based on:

1. Documentation of a high school diploma or the recognized equivalent,

2. Completion of the following Additional Graduation Requirements with grades of C or better: COMM 1 or COMM 1H or COMM 2, PSYCH 1 or PSYCH 1H, NUTR 20, SOC 1 or SOC 1H or SOC 2 or SOC 2H.

Health Screening and Clinical Compliance Requirements

To comply with state and local regulations for health care providers, students enrolled in the Cabrillo College Dental Hygiene Program are required to meet health screening and clinical compliance according to program guidelines, including vaccination and drug testing requirements and to provide documentation thereof. Students are also required to complete criminal background checks and drug screening, and may be denied access to clinical facilities based on the results.

Prerequisites		Units
BIO 4	Human Anatomy	4
BIO 5	Human Physiology	4
BIO 6	Microbiology	4
CHEM 30B	Introductory Organic Chemistry and Biochemistry for Health Occupations	4

ENGL 1A/1AH/1AMC/1AMCH 3

It is required that all science prerequisites be completed within the last six (6) years. Applicants are permitted to repeat prerequisites for a better grade provided the course was completed more than six (6) years ago. Admissions criteria are currently under review and subject to change.

The DH program follows the academic policies and procedures listed in the Cabrillo College Catalog and DH Student Policy Handbook.

MATH 152, or MATH 152A and MATH 152B or MATH 142 or MATH

142A and MATH 142B or equivalent is a prerequisite for CHEM 30A and CHEM 32. CHEM 30A is a prerequisite for CHEM 30B, BIO 5, and BIO 6. These prerequisites may also be used to satisfy appropriate general education areas.

Core Courses Units

DH 7 Head and Neck Anatomy and Embryology 2
DH 160 Oral Health Education2
DH 161 Preparation for Dental Hygiene Clinic 0. 5
DH 162A Patient Assessment I 2.5
DH 162B Patient Assessment II 3
DH 163A Dental Radiology 3
DH 163B Dental Radiographic Interpretation and
Case Studies 1
DH 164 Dental Materials 2
DH 170 Tooth Morphology, Oral Histology, and
Oral Embryology 2
DH 171 Introduction to Clinical Dental Hygiene 6
DH 173 Clinical Dental Hygiene I 6.5
DH 174 Periodontics 2
DH 180 Oral Pathology 2
DH 181 Clinical Dental Hygiene II 8.5
DH 182A Advanced Case Studies 1
DH 183 Clinical Dental Hygiene III 6

Additional Graduation Requirements Units

COMM 1 Public Speaking 3
or
COMM 1H Honors Public Speaking 3
or
COMM 2 Group Discussion 3
PSYCH 1 General Psychology 3
or
PSYCH 1H Honors General Psychology 3
NUTR 20 Nutrition 3
SOC 1 Introduction to Sociology:
Understanding Society 3

or SOC 1H Honors Introduction to Sociology:
Understanding Society 3
or SOC 2 *Contemporary Social Problems 3
or SOC 2H *Honors Contemporary Social Problems 3
*SOC 2/2H meets the Multicultural Studies Requirement for graduation. Please note that the above courses may also be used to satisfy appropriate general education areas.

NOTE: Other courses highly recommended include: DH 455 Dental Terminology, MATH 12 Elementary Statistics, ENGL 2 Composition and Critical Thinking, and have dental office experience prior to entering the DH Program.

General Education

This A.S. Degree requires completion of a 21-unit general education pattern (see Cabrillo College Catalog under Associate in Science Degree or the A.S. Degree worksheets available in Counseling or on the Transfer and Articulation website). Completing the program Prerequisites and Additional Graduation Requirements will meet most areas of the A.S. Degree GE pattern.

Due to the rigorous academic nature of the Dental Hygiene Program it is advisable to complete the general education requirements for the Associate Degree, before entering the program

A Bachelor of Science/Bachelor of Arts Degree from a regionally accredited college or university will satisfy all general education and competency requirements for Cabrillo's non-transfer A.A. and A.S. degrees, with the exception of the multicultural requirement and program specific graduation requirements.

Mathematics Competency Requirement

The A.S. Mathematics requirement may be met by successful completion of Intermediate Algebra or equivalent or a higher-level mathematics course with a grade of "C" or better. Successful completion must be verified by an official college transcript or by an appropriate score on the Cabrillo mathematics assessment.

Multicultural Requirement

An approved multicultural course is required for graduation. This course may be double counted with general education or other program graduation requirements. Courses taken at other regionally accredited colleges can be used when approved by a Cabrillo Counselor.

Associate in Science Degree in Dental Hygiene

General Education Courses 21
Core Courses 58
Total Units 79
Plus approved prerequisite units. See above for information on prerequisites.

Appendix F SLO Department Assessment

CTE Certificate and Degree

Course SLO Departmental Assessment Analysis Form

DH 160, 162A, 181, 183, 184A, 184B, 177

Department	Dental Hygiene
Meeting Date	1/24/19
Course SLOs measured List the courses SLOs whose assessment results were discussed in this meeting	DH 160 Oral Health Education 1. Demonstrate theoretical knowledge base needed to provide entry level dental hygiene patient education. 2. Apply critical thinking and clinical decision making in the creation of disease control programs DH 162 A Patient Assessment 1. Critically assess the information presented in a written medical history, patient interview, extraoral and intraoral inspection in order to detect necessary treatment modifications for patients with medical complexities. 2. Analyze an emergency situation, formulate a plan of action, and initiate proper treatment. DH 177 ITR & RDM 1.Analyze theoretical knowledge, scientific rationale, and radiographic decision-making skills for placement of Interim Therapeutic Restorations (ITR). DH 181 Dental Hygiene II 1. Apply theoretical knowledge, professional concepts and clinical decision-making skills following the dental hygiene process of care to a moderate classification of patients.

	2. Demonstrate appropriate motor skills and ergonomic principles utilizing assessment and treatment instruments in delivering dental hygiene care. DH183 Dental Hygiene Clinic III 1. Apply theoretical knowledge, professional concepts and clinical decision-making skills following the dental hygiene process of care to a moderate classification of patients DH 184A Pain Management I 1. Demonstrate accuracy in assessing patients' dental/medical needs and safely implement appropriate anesthetic solution using the correct technique and dosage for a corresponding dental treatment. DH 184B Pain Management II **1.** Analyze patients' dental/medical and emergency needs and safely deliver nitrous oxide and oxygen for appropriate dental treatment, demonstrating appropriate communication during the process. 2.
Summarize the participation of your full-time faculty in this process (check one)	X Robust participation All three full-time present Mrs. Kelsch, Dr. Clark, Mrs. Vanoli □ Satisfactory participation □ Unsatisfactory participation
Summarize the participation of your adjunct faculty in this process (check one)	X Robust participation Gunn, Black □ Satisfactory participation □ Unsatisfactory participation
If unsatisfactory, how will you improve participation next time?	

Date of last assessment of these SLOs	Fall 2017
Interventions tried after last assessment	Clinical and didactic calibration during each faculty meeting during Flex week and monthly faculty meetings Professional Presenter for clinical calibration and SLO
Assessment Tools (Give examples of major assignments your faculty used to measure the course SLOs)	DH 160 Oral Health Education SLO 1 Final Exam SLO 2 Design a Disease Control Program and carry it out by roleplaying chairside patient education DH 162 A Patient Assessment I SLO 1 Final Exam SLO 2 Project DH 177 ITR & RDM SLO 1 Final Exam DH 181 Dental Hygiene Clinic I SLO 1 Final Exam SLO 2 TalEval Score Tracking Software for Evaluation system for the Dental Hygiene Process of Care DH183 Dental Hygiene Clinic III SLO 1 Final Grade

	DH 184A Pain Management I 1Final Exam DH 184B Pain Management II Final Exam
General Assessment Results (Summarize the overall results of your department) Numerical results (average scores on pre and post tests, scores on rubrics evaluating major assignments or scores on test questions) What student needs and issues were revealed as a result of these scores?	DH 160 Oral Health Education SLO 1 Final Exam All passed with an A SLO 2 Design a Disease Control Program and carry it out by roleplaying chairside patient education All passed DH 162 A Patient Assessment I SLO 1 Final Exam 7 As 11 Bs 3 Cs SLO 2 Project All passed DH 177 ITR & RDM SLO 1 Final Exam All passed

	A 19/20 C 1/20 DH 181 Dental Hygiene Clinic I SLO 1 Final Exam All passed the exam SLO 2 TalEval Score Tracking Software for Evaluation system for the Dental Hygiene Process of Care 19 students passed all the clinical course DH183 Dental Hygiene Clinic III SLO 1 Final Grade 17 students scored A grades 2 students scored B grades DH 184A Pain Management I SLO 1 Final Exam A 5/19 B 8/19 C 5/19 D 1/19 DH 184B Pain Management II Final Exam All passed A=20 B=2

Rate the Results (circle the appropriate rating for the department overall)	4. Almost all have mastered the competency 3. Most have mastered the competency 2. Some have mastered the competency 1. Few have mastered the competency
Next Step in the Classroom to Improve Student Learning How might student performance be improved? Go through list. Highlight what items faculty felt would help them address the needs and issues that were revealed by the assessment. Delete the rest.	o Revise activities leading up to and/or supporting assignment/activities o Increase in-class discussions and activities
Next Step in the Department to Improve Student Learning Go through list. Highlight what items faculty felt would help them address the needs and issues that were revealed by the assessment. Delete the rest.	o Offer/encourage attendance at seminars, workshops or discussion groups about teaching methods o Consult teaching and learning experts about teaching methods
Priorities to Improve Student Learning	1. Two additional full-time faculty 2. Reinstatement of Program TU's College funding of program 3. Prior to starting dental hygiene enrollment in Pathway courses 4. Clinical Calibration 5. Professional Development

(List the top 3-6 things faculty/staff felt would most improve student learning)	6. Tutoring
Timeline for Implementation (List the steps you will take to implement these priorities, along with a timeline)	The steps we are taking to implement the following: 1. Following the College policy in requesting for reinstating two additional full-time (FT) faculty for a total of four. 2. Ever since the college removed the 100 TU's from the DH program in 2014 the DH program has requested restatement of Program TU's in our annual program update. 3. At each faculty meeting we incorporate a Clinical Calibration exercise for clinic and Canvas instruction for didactic courses. 4. Seek grant funding from Strong Work Force (SWF) for Professional Development 5. Seek grant funding from SWF and the Cabrillo College Tutoring Center for tutoring
How do you believe this will impact departmental budget requests and other types of resources?	Yes, it will impact it, but we are making our program sustainable by offering numerous Continuing Education and professional development courses for the dental community. All of this fund raising impacts the educational goals of the program. Students have greater academic challenges that require additional didactic and clinical tutoring that the program cannot provide with limited FT faculty. Restating the two FT faculty would facilitate the support and consistency needed to help with student success.
Next Assessment- in how many years will you assess this competency again (1-6)	We will assess this competency in two years.

CTE Certificate and Degree

SLO Departmental Assessment Analysis #2

Department	Dental Hygiene
Meeting Date	3/8/17
CTE certificate and degree SLOs measured List the SLOs whose assessment results were discussed in this meeting	a) Applying ethical, professional, and legal concepts to the provision and/or the support of oral health care services to all persons
Summarize the participation of your full-time faculty in this process (check one)	X Robust participation □ Satisfactory participation □ Unsatisfactory participation
Summarize the participation of your adjunct faculty in this process (check one)	X Robust participation □ Satisfactory participation □ Unsatisfactory participation
If unsatisfactory, how will you improve participation next time?	N/A
Date of last assessment of these SLOs	August 25, 2015
Interventions tried after last assessment	In DH182A, Adv. Case Studies, assigning students specific case studies that require them to critically think and apply ethical, professional and legal concept to the DH process of care.
Assessment Tools	National Boards Dental Hygiene Examination (NBDHE)

(Give examples of major assignments your faculty used to measure the SLOs)	
General Assessment Results **(Summarize the overall results of your department)** **Numerical results** **(average scores on pre and post tests, scores on rubrics evaluating major assignments or scores on test questions)** **What student needs and issues were revealed as a result of these scores?**	There was one (1) failure out of twenty (20) 2nd year students on NBDHE spring 2016. Student passed 2nd time taking exam. The 95% of the students passed the exam. The one (1) student that did not pass seemed to be laissez faire in his attitude toward the exam. His comment after failing was "I did not take the exam seriously and did not study." It appears the student underestimated the complexity and rigor of the eight (8) hour written exam.
Rate the Results (circle the appropriate rating for the department overall)	4. Almost all have mastered the competency 3. Most have mastered the competency 2. Some have mastered the competency 1. Few have mastered the competency
Next Step in the Classroom **to Improve Student Learning** How might student performance be improved? Go through list. Highlight what items faculty felt would help them address the needs and issues that were revealed by the assessment. Delete the rest.	o State goals or objectives of assignment/activity more explicitly o Revise content of assignment/activities o Revise the amount of writing/oral/visual/clinical or similar work o Revise activities leading up to and/or supporting assignment/activities o Increase in-class discussions and activities o Increase student collaboration and/or peer review o Provide more frequent or more comprehensive feedback on student progress o Increase guidance for students as they work on assignments o Use methods of questioning that encourage the competency you measured

	o State criteria for grading more explicitly o As an instructor, increase your interaction with students outside of class o Ask a colleague to critique assignments/activities o Collect more data o Nothing; assessment indicates no improvement necessary o Other (please describe)
Next Step in the Department **to Improve Student Learning** Go through list. Highlight what items faculty felt would help them address the needs and issues that were revealed by the assessment. Delete the rest.	o Offer/encourage attendance at seminars, workshops or discussion groups about teaching methods o Consult teaching and learning experts about teaching methods o Encourage faculty to share activities that foster competency o Write collaborative grants to fund departmental projects to improve teaching o Purchase articles/books on teaching about competency o Visit classrooms to provide feedback (mentoring) o Create bibliography of resource material o Have binder available for rubrics and results o Analyze course curriculum,, so that the department can build a progression of skills as students advance through courses o Nothing; assessments indicate no improvements necessary o Other- explore ways to increase faculty clinical calibration
Priorities to Improve Student Learning (List the top 3-6 things faculty/staff felt would <u>most</u> improve student learning)	1.) Faculty share teaching strategies 2.) Faculty share one class activity 3.) Have the lead faculty for each clinic session take notes of faculty calibration before and after clinic during the block instructor huddles and share with the 1st or 2nd Year Clinical Coordinator.
Timeline for Implementation **(List the steps you will take to implement these priorities, along with a timeline)**	On April 7 and April 14, 2017 will be having mandatory curriculum meetings which will include sharing teaching strategies and class activities.

	Beginning in February 2017 the faculty began the following procedure to implement this semester in all clinical sessions. 1.) The steps we are taking are to have the Clinical Coordinators collect the notes of faculty calibration before and after clinic during the block instructor huddles and share with ALL faculty in the department. 2.) The Clinical Coordinator shares the concepts addressed in number 1 above with the students.
How do you believe this will impact departmental budget requests and other types of resources?	This should impact the departmental budget in a positive way because it should increase the NBDHE from 95% to 100%.
Next Assessment- in how many years will you assess this competency again (1-6)	We will assess this competency again in two years.

Appendix G National Boards Outcomes

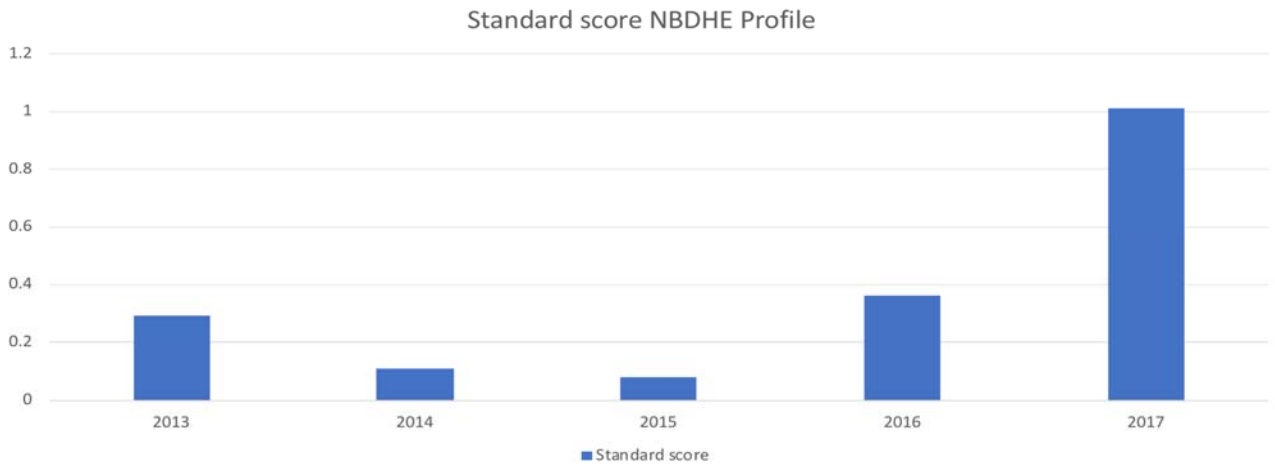

Table 6: Standard NBDHE Profile

Table 6 represents the d Values standardized difference between the schools average score in all areas of the test the national average score. We have always been above the national standard on the overall testing.

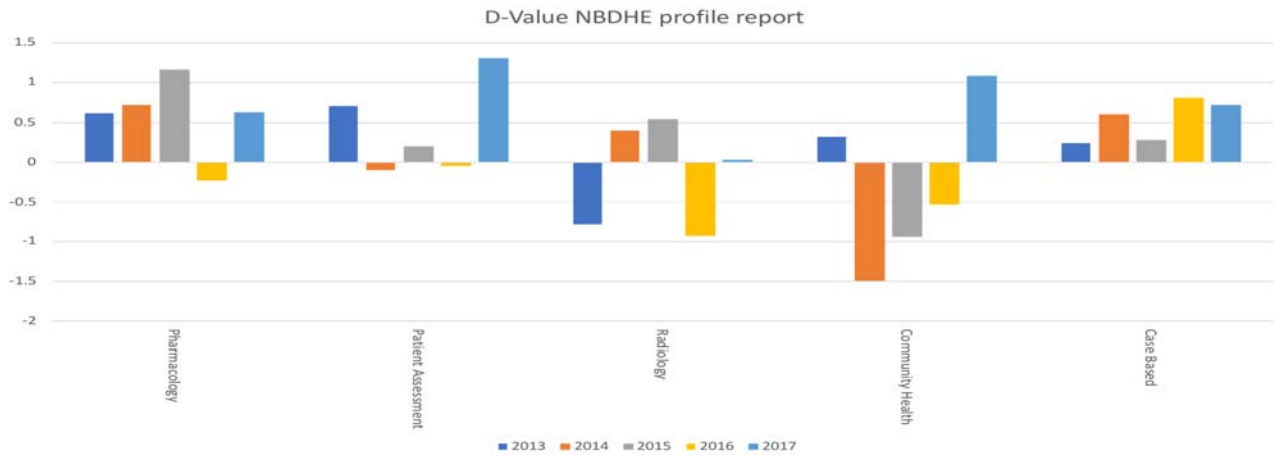

Table 7: D-Value Physiology, Patient Assessment, Radiology, Community Health, Case Based

Students have struggled with community oral health from 2014 to 2016. A long-time instructor retired the previous year. The scores have been solid since we have an experience teacher teaching

that course. In our SLO meetings we have reviewed these courses and developed plans to resolve issues. The 2017 results all these are areas in this graph student performed above the national average, with case based, community health and patient assessment being the strongest areas.

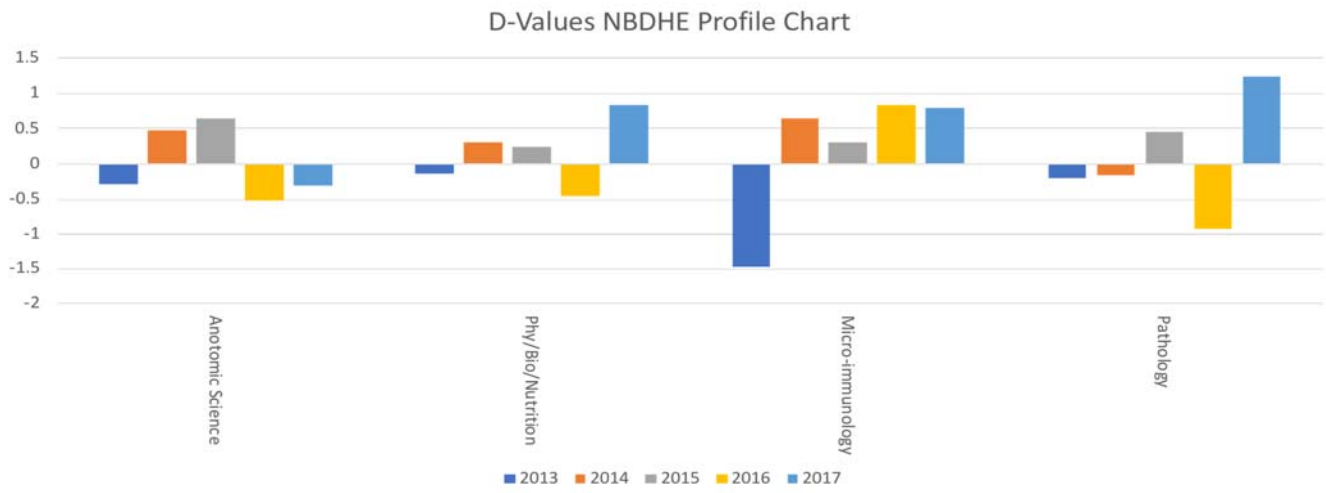

Table 8: D-Value Anatomic science, Phy/bio, Nutrition, Micro immunology, Pathology

Many of these courses reflect the student learning outcomes from schools outside our district. Many students take these specific courses at colleges other than Cabrillo. In 2017 the area that the students performed below the national average was anatomy. We plan to add HESI evaluation and programing to strengthen students understanding.

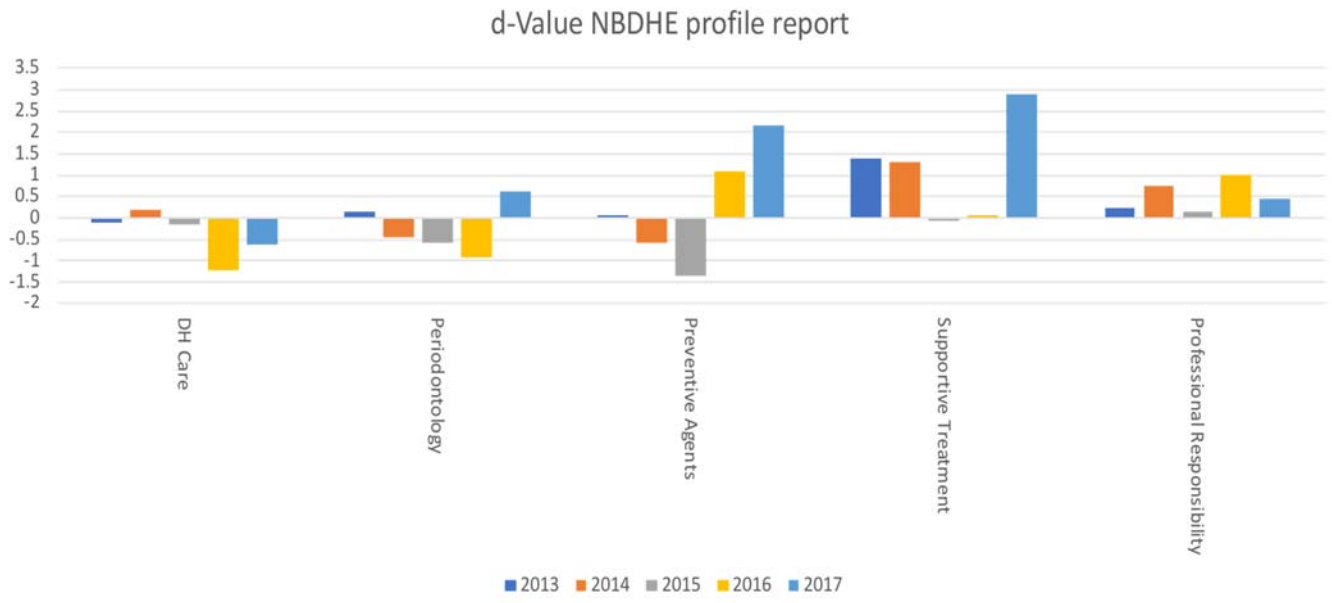

Table 9: D-Value DH care, periodontology, preventive agents, supportive treatment, professional responsibility

The outcomes from table 9 reflect our need to improve DH Care. We have worked on our SLOs and reviewed the NBDHE profile report involved with periodontics and supportive treatment this has greatly improved our d values.